

MARLBORO CENTRAL SCHOOL DISTRICT

HS SCIENCE: ASTRONOMY

Title or Topics	Concepts / Skills	Major Assessments (Tests, projects, etc.)	Time Frame (Number of weeks)
Introduction to Facilities	Use, operation, function of the planetarium and observatory at Marlboro High School	Explaining major concepts explored, specifically operation and purpose of equipment and technology in the room	1.5
Observational Astronomy	Exploration of astronomical items and related phenomenon that can be seen without any visual aid. Introduction to stars and constellations.	Identify the difference between stars, planets, constellations, deep space objects, and other objects visible to unaided eye. Testing of constellations will be both written and via pointing out beneath the dome.	1.5
Measurement in Astronomy	Cardinal Points / Compass Rose Azimuth, Altitude Right Ascension, Declination Meridian Zenith / Nadir Celestial Equator Ecliptic Apparent Paths	Examination covering star/object location. Students are expected to point out items when location is described via RA/Dec or Az/Alt as well as identify vocabulary.	3
Comparative Planetology	Characteristics of all planets and dwarf planets.	Vocabulary terms, surface and atmospheric conditions, and visitations via space missions. Testing completed in segments of two planets at a time.	10
Interdisciplinary Project Part 1	Students create a planet from scratch, including artwork on the computer. A strict series of guidelines are followed as	Presentation to the class. Students will have the rubric ahead of time to encourage completion of specific items on	8

	students create a world with very specific characteristics.	the planet (i.e. name, etymology, discovery, location, size, temperature, weather, climate, surface features, appearance, satellites, rings, seasons, revolution, rotation, etc.)	
Interdisciplinary Project Part 2	Students create a creature from scratch, including artwork on the computer, that lives on the planet created in part one of the project.	Presentation to the class. Students will have the rubric ahead of time to encourage completion of specific items about the creature (i.e. diet, habitat, adaptations, appearance, reproduction, communication, intelligence, etc.)	6
The Space Program	Apollo Missions and landing on the Moon, the Space Shuttle program, disasters and accidents in space (Columbia/Challenger) the space race, and the future of space exploration and space travel.	Vocabulary, timeline, significance of events.	2.5
Deep Space / Review Constellations	Black holes, nebula, quasars, pulsars, and bizarre phenomenon. Constellations are then reviewed for end of year test.	Vocabulary, and verbal/written review of 50 stars and constellations.	Remainder of school year